AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A method of configuring an ~~antenna configuration characterized in that the~~ antenna the method comprising:

constructing the antenna to comprise ~~comprising~~ a plurality of antenna elements; and ~~is configured~~

configuring the antenna for line of sight (LOS) communication;

such that the antenna elements ~~separation~~ is set in relation to communications distance.

2. (Currently Amended) The method according to claim 1 wherein ~~characterized in that the antenna is configured~~ configuring the antenna such that the separation of the antenna elements ~~separation~~ is set in relation to communications wavelength.

3. (Currently Amended) The method according to claim 1 wherein ~~or 2 characterized in that~~ the antenna configuration maximizes multiple-input multiple-output (MIMO) ~~MIMO~~ channel capacity.

4. (Currently Amended) The method according to claim 1 wherein ~~or 2 characterized in that~~ for a linear antenna, the separation of the antenna elements ~~separation~~ is set in relation to $\sqrt{D\lambda/N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements.

5. (Currently Amended) The method according to claim 1 wherein ~~or 2 characterized in that~~ for a square grid antenna the antenna elements, separation

is set in relation to $\sqrt{D\lambda/N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements.

6. (Currently Amended) The method according to claim 5 wherein ~~characterized in that~~ $N=n^2$ for n an integer greater than 1.

7. (Currently Amended) The method according to claim 1 wherein ~~or 2 characterized in that~~ for a rectangular grid antenna, the separation of the antenna elements ~~separation~~ is set in relation to $\sqrt{D\lambda/N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements in dimension of separation.

8. (Currently Amended) The method according to claim 7 wherein ~~characterized in that~~ the dimension of separation is horizontal dimension.

9. (Currently Amended) The method according to claim 7 wherein ~~characterized in that~~ the dimension of separation is vertical dimension.

10. (Currently Amended) The method according to claim 1 wherein ~~or 2 characterized in that~~ for a triangular grid antenna with three antenna elements, the separation of the antenna elements ~~separation~~ is set in relation to $\sqrt{D\lambda/3}$, where D is communications distance and λ is communication wavelength.

11. (Currently Amended) A method of configuring an antenna ~~antenna configuration characterized in that~~ an antenna comprising, the method comprising

constructing the antenna to comprise a plurality of clusters of ~~one or more~~ antenna elements; and

configuring the antenna ~~is configured~~ such that the plurality of clusters of antenna elements are separated by a distance set in relation to communications distance.

12. (Currently Amended) The method according to claim 11 wherein ~~characterized in that~~ the antenna is configured such that the plurality of clusters of antenna elements are separated by a distance set in relation to communication wavelength.

13. (Currently Amended) The method according to claim 11 wherein ~~or 12 characterized in that~~ for a linear antenna the plurality of clusters of antenna elements are separated by a distance set in relation to $\sqrt{D\lambda / L}$ where D is communications distance, λ is communication wavelength and L is number of clusters.

14. (Currently Amended) The method according to claim 11 wherein ~~characterized in that~~ for a square grid antenna the plurality of clusters of antenna elements ~~clusters~~ are separated by a distance set in relation to $\sqrt{D\lambda / \sqrt{L}}$ where D is communications distance, λ is communication wavelength and L is number of clusters.

15. (Currently Amended) The method according to claim 14 wherein ~~characterized in that~~ $L=l^2$ for l an integer greater than 1.

16. (Currently Amended) The method according to claim 11 wherein ~~or 12 characterized in that~~ the antenna elements within a cluster are separated by a distance smaller than the smallest distance between clusters.

17. (Currently Amended) The method according to claim 1 wherein ~~or 2 characterized in that~~ the antenna configuration is three-dimensional.

18. (Currently Amended) The method according to claim 17 wherein ~~characterized in that~~ the antenna configuration comprises two layers, where each layer comprises a planar arrangement of antenna elements on a square grid.

19. (Currently Amended) The method according to claim 17 wherein ~~characterized in that~~ the antenna configuration comprises antenna elements positioned equidistant in a three-dimensional space.

20. (Currently Amended) The method according to claim 19 wherein ~~characterized in that~~ the antenna elements are positioned to vertices of a cube.

21. (Currently Amended) The method according to claim 19 wherein ~~characterized in that~~ the antenna elements are positioned to vertices of a tetrahedron.

22. (Currently Amended) The method according to claim 11 wherein ~~any of claims 1, 2, 11 and 12 characterized in that~~ the antenna elements are fed with signals processed according to singular value decomposition for a transmission channel over the communications distance.

23. (Currently Amended) The method according to claim 22 wherein ~~characterized in that~~ the transmission channel considered is a flat fading sub-carrier.

24. (Currently Amended) The method according to claim 22 wherein ~~characterized in that~~ the transmission channel considered is an OFDM sub-carrier.

25. (Currently Amended) The method according to claim 11 wherein ~~any of claims 1, 2, 11 and 12 characterized in that~~ the signals received from the antenna elements are processed according to zero forcing for a transmission channel over the communications distance.

26. (Currently Amended) The method according to claim 11 wherein ~~any of claims 1, 2, 11 and 12 characterized in that~~ the signals received from the

antenna elements are processed to minimize mean square error for a transmission channel over the communications distance.

27. (Currently Amended) The method according to claim 11 wherein ~~any of claims 1,2, 11,12, 22 and 25 characterized in that~~ signal processing of signals received or to be transmitted is performed at high-frequency.

28. (Currently Amended) The method according to claim 27 wherein ~~characterized in that~~ the processing is performed by one or more 3-dB hybrids.

29. (Currently Amended) The method according to claim 27 wherein ~~characterized in that~~ the processing is performed by one or more Butler matrix directional couplers.

30. (Currently Amended) The method according to claim 27 wherein ~~characterized in that~~ the processing is performed by an arrangement of microstrip.

31. (Currently Amended) The method according to claim 27 wherein ~~characterized in that~~ the processing is performed by an arrangement of waveguides.

32. (Currently Amended) The method according to claim 31 wherein ~~any of claims 1-31 characterized in that~~ the antenna configuration is a radio antenna configuration.

33. (Currently Amended) The method according to claim 31 wherein ~~any of claims 1-31 characterized in that~~ the antenna configuration is a configuration of sensors or actuators for optical communications.

34. (Currently Amended) An antenna configuration ~~characterized by the antenna~~ comprising:

a plurality of antenna elements; and

means for configuring the plurality of antenna elements for line of sight (LOS) communication ~~configured~~ such that the antenna elements separation is set in relation to communications distance.

35. (Currently Amended) The antenna configuration according to claim 34 wherein ~~characterized by~~ the antenna is configured such that the antenna elements separation is set in relation to communication wavelength.

36. (Currently Amended) The antenna configuration according to claim 34 wherein ~~or 35 characterized in that~~ the antenna configuration maximizes MIMO channel capacity.

37. (Currently Amended) The antenna configuration according to claim 34 wherein ~~or 35 characterized by~~ the antenna elements separation is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements, and wherein the antenna configuration is a linear antenna configuration.

38. (Currently Amended) The antenna configuration according to claim 34 wherein ~~or 35 characterized by~~ the antenna elements separation is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements, and wherein the antenna configuration is a square grid antenna configuration.

39. (Currently Amended) The antenna configuration according to claim 38 wherein ~~characterized in that~~ $N=n^2$ for n an integer greater than 1.

40. (Currently Amended) The antenna according to claim 34 wherein ~~or 35 characterized by~~ the antenna elements separation is set in relation to

$\sqrt{D\lambda/N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements in dimension of separation, for a rectangular grid antenna.

41. (Currently Amended) The antenna according to claim 40 wherein ~~characterized in that~~ the dimension of separation is horizontal dimension.

42. (Currently Amended) The antenna according to claim 40 wherein ~~characterized in that~~ the dimension of separation is vertical dimension.

43. (Currently Amended) The antenna according to claim 34 wherein ~~or 35 characterized by~~ the antenna elements separation is set in relation to $\sqrt{D\lambda/3}$, where D is communications distance and λ is communication wavelength, a triangular grid antenna with three antenna elements.

44. (Currently Amended) The antenna configuration according to claim 34, ~~or 35 characterized by~~ the antenna configuration being three-dimensional.

45. (Currently Amended) The antenna configuration according to claim 44, ~~characterized by~~ the antenna configuration comprising two layers, where each layer comprises a planar arrangement of antenna elements on a square grid.

46. (Currently Amended) The antenna configuration according to claim 44, ~~characterized by~~ the antenna configuration comprising antenna elements positioned equidistant in a three-dimensional space.

47. (Currently Amended) The antenna configuration according to claim 46, ~~characterized by~~ the antenna elements being positioned to vertices of a cube.

48. (Currently Amended) The method according to claim 46, ~~characterized by~~ the antenna elements being positioned to vertices of a tetrahedron.

49. (Currently Amended) An antenna configuration ~~characterized by an antenna~~ comprising:

a plurality of clusters of ~~one or more~~ antenna elements;

means for configuring ~~configured~~ the antenna elements such that the plurality of clusters of antenna elements ~~clusters~~ are separated by a distance set in relation to communications distance.

50. (Currently Amended) The antenna configuration according to claim 49, ~~characterized by~~ the antenna being configured such that the plurality of clusters of antenna elements ~~clusters~~ of antenna elements are separated by a distance set in relation to communication wave- length.

51. (Currently Amended) The antenna configuration according to claim 49, ~~or 50 characterized by~~ the plurality of clusters of antenna elements ~~clusters~~ being separated by a distance set in relation to $\sqrt{D\lambda / L}$, where D is communications distance, λ is communication wavelength and L is number of clusters, and wherein the antenna configuration is a linear antenna configuration.

52. (Currently Amended) The antenna configuration according to claim 49, ~~or 50 characterized by~~ the plurality of clusters of antenna elements ~~clusters~~ being separated by a distance set in relation to $\sqrt{D\lambda / \sqrt{L}}$ where D is communications distance, λ is communication wavelength and L is number of clusters and wherein the antenna configuration is a square grid antenna configuration.

53. (Currently Amended) The antenna configuration according to claim 52, ~~characterized in that~~ $L=l^2$ for l an integer greater than 1.

54. (Currently Amended) The antenna configuration according to claim 49, ~~or 50 characterized in that~~ the antenna elements within a cluster are separated by a distance smaller than the smallest distance between the plurality of clusters of antenna elements ~~clusters~~.

55. (Currently Amended) The antenna configuration according to claim 49, ~~any of claims 34, 35, 49 and 50 characterized by~~ one or more antenna element feeders being adapted to feed the antenna elements with signals processed according to singular value decomposition for a transmission channel over the communications distance.

56. (Currently Amended) The antenna configuration according to claim 55, wherein ~~characterized in that~~ the transmission channel considered is a flat fading sub-carrier.

57. (Currently Amended) The antenna configuration according to claim 55, wherein ~~characterized in that~~ the transmission channel considered is an OFDM sub-carrier.

58. (Currently Amended) The antenna configuration according to claim 49, wherein ~~any of claims 34,35, 49 and 50 characterized by~~ one or more processing elements are adapted to process signals received from the antenna elements according to zero forcing for a transmission channel over the communications distance.

59. (Currently Amended) The antenna configuration according to claim 49, wherein ~~any of claims 34,35, 49 and 50 characterized by~~ one or more processing elements are adapted to process signals received from the antenna elements to minimize mean square error for a transmission channel over the communications distance.

60. (Currently Amended) The antenna configuration according to claim 49, wherein ~~any of claims 34, 35, 49, 50, 55 and 58 characterized by~~ one or more processing elements are adapted to process at high-frequency signals received or to be transmitted.

61. (Currently Amended) The antenna configuration according to claim 60, ~~characterized by~~ the one or more processing elements being one or more 3-dB hybrids.

62. (Currently Amended) The antenna configuration ~~method~~ according to claim 60, ~~27characterized by~~ the one or more processing elements being one or more Butler matrix directional couplers.

63. (Currently Amended) The antenna configuration according to claim 60, ~~characterized by~~ the one or more processing elements being an arrangement of microstrip.

64. (Currently Amended) The antenna configuration according to claim 60, ~~characterized by~~ the one or more processing elements being an arrangement of waveguides.

65. (Currently Amended) The antenna configuration according to claim 49, ~~any of claims 34-64 characterized by~~ the antenna elements being electrically active elements.

66. (Currently Amended) The antenna configuration according to claim 49, ~~any of claims 34-64 characterized by~~ the antenna elements being directors.

67. (Currently Amended) The antenna configuration according to claim 66, ~~characterized by~~ the directors being reflectors.

68. (Currently Amended) The antenna configuration according to claim 49, ~~any of claims 34-67 characterized by~~ the antenna elements being arranged ~~circular~~ symmetrically in a circular pattern.

69. (Currently Amended) The antenna configuration according to claim 49, ~~any of claims 34-67 characterized by~~ the antenna elements being arranged in a hexagonal pattern.

70. (Currently Amended) The antenna configuration according to claim 49, ~~any of claims 34-67 characterized by~~ the antenna elements being mounted on position adjustable rods or wires.

71. (Currently Amended) The antenna configuration according to claim 70, ~~characterized by~~ the position adjustable rods or wires being electromechanically adjustable.

72. (Currently Amended) The antenna configuration according to claim 71 wherein ~~characterized in that~~ the adjustable position is adaptive to propagation channel properties corresponding to a measured channel matrix.

73. (Currently Amended) The antenna configuration according to claim 49, ~~any of claims 34-69 characterized by~~ the antenna configuration being adapted to a predetermined range of communications distances.

74. (Currently Amended) An antenna configuration, wherein ~~characterized by~~ the antenna configuration comprising a plurality of antenna elements, of which a subset forms an active set of antenna elements, the active antenna elements forming an antenna configuration according to claim 34 ~~any of claims 34-69~~.

75. (Currently Amended) The antenna configuration according to claim 49, wherein ~~any of claims 34-74 characterized in that~~ the antenna configuration is a radio antenna configuration.

76. (Currently Amended) The antenna configuration according to claim 49, wherein ~~any of claims 34-74 characterized in that~~ the antenna configuration is a configuration of sensors or actuators for optical communications.

77. (Currently Amended) A communications system wherein ~~characterized by~~ means for carrying out the method in claim 1 ~~any of claims 1-31~~.

78. (Currently Amended) A communications system wherein ~~characterized by~~ a plurality of devices in claim 34 ~~any of claims 34-74~~.

79. (Currently Amended) The communications system according to claim 78 wherein ~~characterized in that~~ the antenna elements distances are set different for a first and a second antenna, the two antennas operating in pair, such that the geometrical average of the elements distance of the first, antenna, d_1 and the elements distance of the second antenna, d_2, is the effective antenna elements distance.